An analysis of the decision-making process for single implant treatment in general practice

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Background: There is little information on the decision-making process for single implant treatment in general practice.
Aim: To study the incidence of and the factors associated with the decision to perform single implant treatment after tooth extraction by general practitioners in a private, fee-for-service setting.
Methods: One hundred practitioners with a general dental practice in Ghent were randomly selected from an official list received by the Belgian Social Security Institute. Clinicians were asked to fill in a study form for every single extraction they performed during an 8-week period. The study form related to the treatment decision as discussed with the patient and a number of patient- and clinician-related factors. The association of these factors with single implant treatment was evaluated using univariate tests and logistic regression. A decision-tree was also constructed with the predictors from the regression analysis as independent variables.
Results: Ninety-four general dentists (52 males, 42 females; mean age 49; range 24–68)agreed to participate and extracted 1180 single teeth in an equal number of patients (50% males, 50% females; mean age 53; range 18–90). The main reasons for tooth loss were caries (48%) and periodontal disease (28%). At the time of extraction tooth replacement was deemed necessary in half of the patients and are movable partial denture was chosen in 55% of them. Similar frequencies were found for fixed partial denture (23%) and single implant treatment (21%). Although the vast majority of patient- and clinician-related factors showed a significant association with the latter on the basis of univariate tests, logistic regression only identified seven predictors. These included location of the extracted tooth, number of missing teeth, regular supportive care, bone loss at adjacent teeth, restoration level of adjacent teeth, gender of the clinician and dentists' experience in implant prosthetics. The decision tree identified bone loss at adjacent teeth and number of missing teeth as the most important predictors for single implant treatment.
Conclusions and clinical implications: If tooth replacement was deemed necessary at the time of extraction, a single implant was the treatment of choice in only one-fifth of the patients. Mainly oral factors had an impact on the decision-making process in contrast to patients' background and medical factors. Dentists' experience in implant prosthetics also showed a positive association with single implant treatment as opposed to dentists' experience in implant surgery.

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